LIQUOR DETECTION AND ACCIDENT PREVENTION OF VEHICLE MANAGEMENT USING IOT DEVICES FOR DRIVERS

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ABSTRACT:A protected driving arrangement of vehicle for alcoholic and driving cases, in this venture we have utilized a liquor distinguishing sensor in vehicle which faculties and recognizes liquor gases and sends messages ceaselessly to their relatives inside like clockwork. In this procedure arm7 microcontroller is associated with GSM and GPS modules. GPS module gets the situation of vehicle with longitude and scope then through GSM it sends the messages to the relative of the driver until the point when he achieves home securely. We have additionally utilized auto crash avoidance innovation with ultrasonic sensor which likewise sends messages by means of GSM to relatives of the driver while mishap occurs of vehicle.

Keywords:LPC2148, GSM (SIM300),GPS, Alcohol gas sensor (MQ135), Ultrasonic sensor (hc SR_04)

I. INTRODUCTION

The reason behind this venture is "Tipsy and driving recognition". Presently multi day, numerous mishaps are happening a direct result of the liquor utilization of the driver or the individual who is driving the vehicle. Accordingly, Drunken driving is a most reason of mishaps in all nations everywhere throughout the world. Liquor Detector in Car framework is intended for the security of the general population inside the auto. This task ought to be fitted/introduced inside the vehicle. Incorporated approach of utilizing simultaneous designing practices for building up the techniques for ruggedisation for GPS Vehicle Tracking System is adopted. [6] Development and organization of GPS/GSM based vehicle following and ready framework which permits between city transport organizations to track their vehicle progressively and gives a ready framework to providing details regarding mischances occurrences [3]. These days, web are utilized nearly in any application and field, even little thing enrolled with code and refresh in database at that point can get it by online framework. Quantities of vehicles are noteworthy increment consistently and numerous instances of vehicle robbery and missing in this manner web of things (IoT) is an innovation can be used to defeat the issues[5].

Current age cell phones give vigorous sensor suites including accelerometers, GPS, receivers, and cameras. These sensors permit cell phones to be utilized for different detecting assignments, for example, action observing, individual wellbeing, and condition checking. Cell phones likewise give a great correspondence stage as they are by and large furnished with Wi-Fi, Bluetooth, and a 3/4G information association. Cell phones are greatly compact and have intense handling and capacity abilities. What's more, numerous physiological sensors come outfitted with Bluetooth. They can be associated with a cell phone remotely and used to expand its detecting capacities. This paper portrays starter endeavors towards a framework that uses a cell phone based remote body region coordinate with particular applications in psychophysiological appraisal and more broad applications in setting mindful registering and feeling focused computing. [7] The principal issue here is to recognize vehicles in changing condition and enlightenment. Despite the fact that there have been various distributions on general question acknowledgment and following, or a mix of them [1] we clarify the fundamental thought behind the following calculation created in this exploration. Vehicle following has been founded on the district based following methodology. For singular vehicle following the initial step, procurement picture successions and foreordaining the identification zones at every path. The second, we have led the foundation subtraction [2]

II. BLOCK DIAGRAM

The main a part of this project is associate “Alcohol sensor”. If the person within automobile has consumed alcohol, then it's detected by alcohol device. device provides this signal to a comparator IC. The output of comparator is connected to the microcontroller. Microcontroller is that the heart of this project. it's the electronic equipment of the entire circuit. Microcontroller provides high pulse to the buzzer circuit and also the buzzer is turned on. At a similar time, a relay is off. thanks to this the ignition of the automobile is deactivated.

Detection of accidents thanks to amendments in vehicle movement like speed change in accident vehicles or vehicles behind the accident ones and lane changes. If sure conditions square measure met, associate abnormal state is set to exist. Such conditions embrace changes in traffic flow before associate accident happens, and changes in individual motorcar speed. As for lane changes, we tend to set to not use these as a reference as a result of lane changes could occur merely thanks to the road curvature and angle of read, severally of accidents. [8].

If we have a tendency to don’t wish to show off the ignition of automotive then we are able to use GSM and GPS electronic equipment for track location of car. we've additionally use GSM and GPS module. GPS discover the placement of car with line of longitude and latitude and GSM can send messages to relatives of the driving force. currently for vehicle accidents bar system, we are going to use inaudible device that sensing the restricted distance from alternative vehicles, neither device is going to be activate and send messages to relatives of the vehicle.

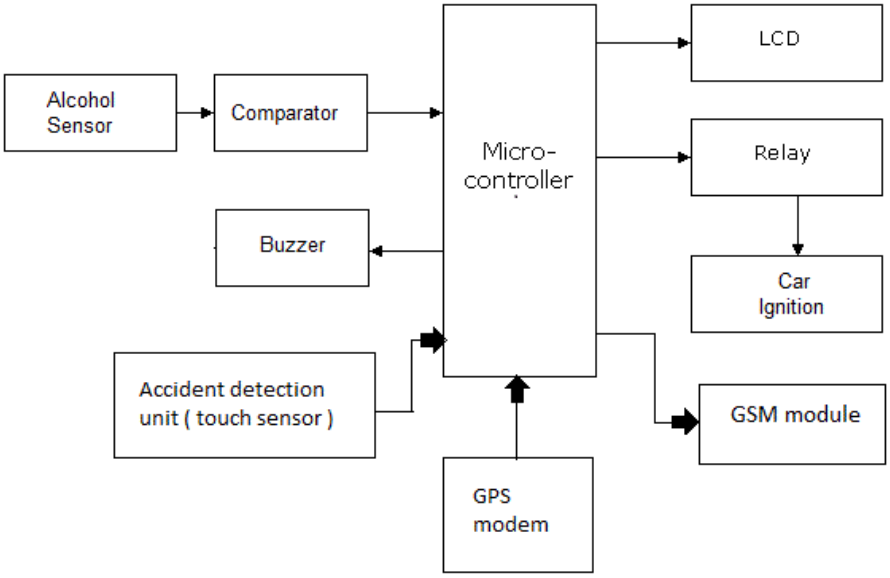


Figure 1. Block Diagram

The GPS MT System utilizes signals from the NAVSTAR GPS constellation for computing state vectors. The ensuing state vector information (position, speed vectors and time) are going to be transmitted to ground based mostly S-Band mensuration receivers and processed by ULA Mission management and cognizant vary Safety organizations at the Japanese and Western flight check ranges. The GPS MT System are going to be operational from pre-launch activities through vary Safety responsibility. [4]

III. COMPONENT

MQ-135 alcohol gas sensor

Wide detecting scope, Fast response and High sensitivity, Stable and long life Simple drive circuit

Figure 2. MQ-135 Alcohol gas sensor

Ultrasonic sensor

Ultrasonic sensors work on a principle similar to radar or sonar, which detect attributes of a target by interpreting the echoes from radio or sound waves respectively.Some ultrasonic sensorscreate high frequency sound waves and evaluate the echo which is received back by the sensor, measuring the time interval between sending signal and receiving echo to determine the distance to an object. Passive ultrasonic sensors are basically microphones that detect ultrasonic noise.

Figure 3. HC_SR04 Ultrasonic sensor

IV. CIRCUIT DIAGRAM

The LPC21418 microcontroller is predicated on a thirty-two bit ARM7TDMI-S electronic equipment with period of time emulation and embedded trace support, that mixes the microcontroller with embedded high speed non-volatile storage starting from thirty-two KB to 512 KB. A 128-bit wide memory interface and a singular accelerator design change 32-bit code execution the utmost clock rate. For important code size applications, the choice 16-bit Thumb mode reduces code by over half-hour with smallest performance.Due to their tiny size and low power consumption, LPC2148 square measure ideal for applications wherever shrinking may be a key need, like access management.A serial communications interfaces starting from a USB a pair of.0 Full Speed device, multiple UARTS and on-chip SRAM of eight KB up to forty KB, build these devices compatible for communication gateways and protocol converters, soft modems, voice recognition and low finish imaging, providing each massive buffer size and high process power. varied 32-bit timers, single or twin 10-bit ADC(s), 10-bit DAC PWM channels and forty-five quick GPIO lines with up to 9 edge or level sensitive external interrupt pins build these microcontrollers significantly appropriate for industrial management and medical purpose.

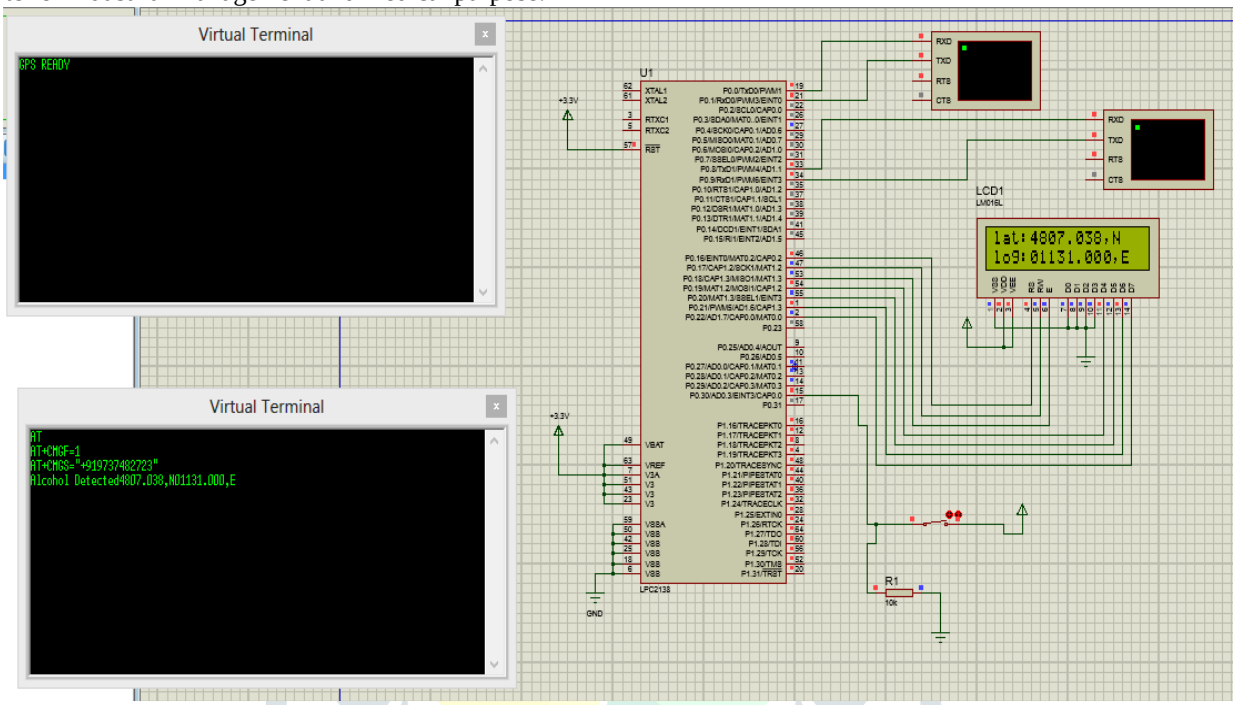


Figure 4. GPS/GSM and LCD interfacing with LPC2148 switch as Alcohol gas sensor and ultrasonic sensor

Alcoholism may be a weakening disorder for the individual and really pricey for society. A most of alcohol analysis is to know the neural underpinnings related to the transition from alcohol use to alcohol dependence. Positive reinforcement is vital within the early stages of alcohol use. Negative reinforcement is often vital early in alcohol use by individuals self-medicating coexistent emotive disorders, however its role doubtless will increase the transition to dependence. Chronic exposure to alcohol induces changes in neural circuits that management psychological feature processes, together with arousal, reward, and stress. These changes have an effect on systems utilizing the sign molecules modulating the brain's stress response. These neuro variations turn out changes in sensitivity to alcohol's effects following recurrent exposure and a withdrawal state followingdiscontinuation of alcohol use. Chronic alcohol exposure additionally leads to persistent neural deficits, a number of which can totally recover extended periods of abstinence. However, the organism half remains at risk of relapse, even once long periods of abstinence. Recent analysis that specialize in brain arousal, reward, and stress systems is fast our understanding of the elements of alcohol dependence and causative to the event of recent treatment ways.

GPS position location principle:

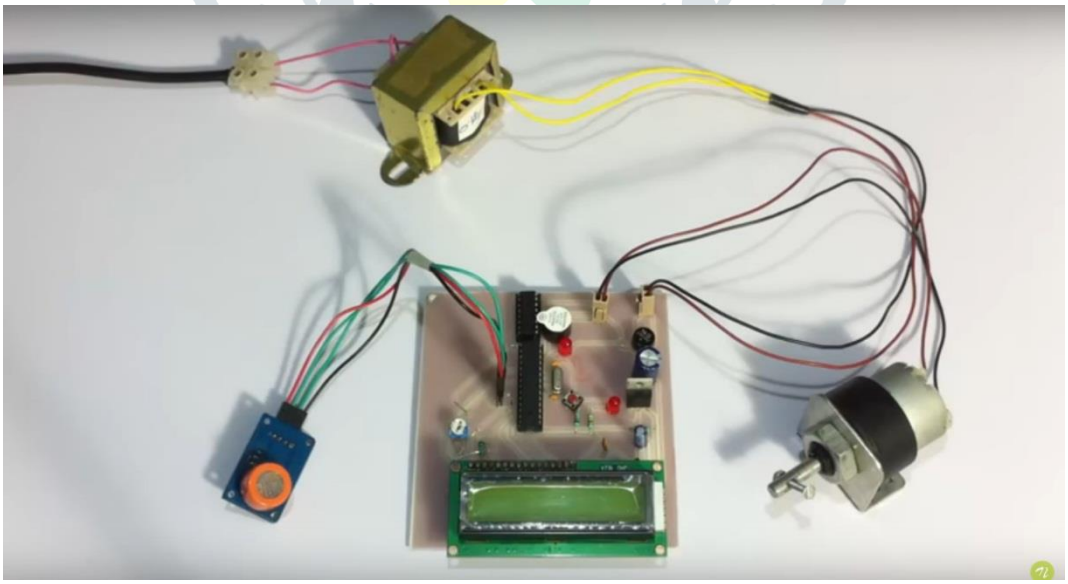
- The GPS uses a constellation of twenty-four satellites, once each twelve hours.
- The orbital position is continually detecting and updated by the bottom instrumentation.
- every satellite is acknowledging by range and distinctive signal frequency.
- This signal travels at the speed of sunshine.
- Every satellite includes an excellent clock, 0.000000003 sec.as a result of the GPS receiver calculates its location, the task of the receiver is to work out its distance from multiple satellites.
- The GPS system uses 2 forms of signals to calculate distance.
- Code-phase locomotor
- Carrier-phase locomotor
- Every satellite includes a distinctive signal.
- Once the receiver is aware of object's distance from just one satellite, its location may well be anyplace on the world surface that's Associate in Nursing equal distance from the satellite.
- diagrammatical by the circle within the illustration.
- The receiver should have further data.

The hardware interface with GPS units is intended to set up the NMEA needs. they're additionally compatible with most pc serial ports victimization RS232 protocols, but properly speaking the NMEA commonplace isn't RS232. All units that support NMEA ought to support this speed. at a b/s rate of 4800, you'll be able to simply send enough knowledge to over fill a full second of your time. For this reason, some units send updates each 2 seconds or might send some knowledge each second whereas reserving alternative knowledge to be sent less usually. additionally, some units might send knowledge a few of seconds previous whereas alternative units might send knowledge that's collected among the second it's sent. unremarkably time is distributed in therefore me field among every second so it's pretty simple to work out what a specific GPS is doing. Some sentences is also sent solely throughout a specific action of the receiver like whereas following a route whereas alternative receivers invariably send the sentence and simply null out the values. alternative distinction are going to be noted within the specific knowledge descriptions outlined later within the text service.

This contains vehicle unit and therefore the management system. The device ought to be able to interface with the car's system. The accident interference technology works with unwearable sensing element once it hits but distance that pre determines in system then it'll move and message shown that accident happens. The system additionally send SMS to drivers relatives or nearest police office or motorcar.

Figure 5. SIM 300 modem

GSM modem is used to communication between a User and a GSM system. GSM modem consists of a GSM modem assembled together with power supply circuit and communication interfaces (like RS-232, USB, etc) for computer. A GSM MODEM can perform the operations as Receive, send or delete SMS messages in a SIM. We are using here Sim300 GSM model as receive and send SMS.



V. CONCLUSION

Our system efficiently checks the accidents occurs or not and drunken driving. By implementing this system in vehicle, a safe journey is possible which would decrease the injuries during accidents and also reduce the accident rate due to drunken driving. This system has also accident prevention technology which would reduce the accident of the vehicle in crowd areas. We can describe that this is a safety features for vehicle because if alcohol detected or accident happens then it will stop automatically. In case of alcohol detected or any accident happens it would send the messages to the friends continuously about the location of the accident happened till the first aid reaches the rider. Our system helps also to know the location of the vehicle for rescuing in the case of theft incidents.

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